Chemical Geology (Isotope Geoscience Section), 65 (1987) 435–436
Elsevier Science Publishers B.V., Amsterdam — Printed in The Netherlands

Contents Volume 65, 1987

Research Papers

Thermal annealing of fission tracks in apatite, 2. A quantitative analysis
G.M. Laslett (Clayton, Vic., Australia), P.F. Green, I.R. Duddy and A.J.W. Gleadow (Parkville, Vic., Australia) 1
Lead isotopic composition of the oldest volcanic rocks of the eastern Greater Antilles island arc
G.L. Cumming (Edmonton, Alta., Canada) and S.E. Kesler (Ann Arbor, Mich., U.S.A.) 15
Recent Pb loss in zircon: a natural or laboratory-induced phenomenon?
L.P. Black (Canberra, A.C.T., Australia) 25
Effect of chemical weathering on the Rb–Sr date of feldspar in Neogene till, Mount Fleming, South Victoria Land, Antarctica
P.D. Boger, Jane L. Boger (Geneseo, N.Y., U.S.A.), Lois M. Jones (Ponca City, Okla., U.S.A.) and G. Faure (Columbus, Ohio, U.S.A.) 35
Thermoluminescence dating and its implications for the chronostratigraphy of loess–paleosol sequences in the Kashmir Valley (India)
A.K. Singhvi (Heidelberg, Federal Republic of Germany, and Ahmedabad, India), A. Bronger (Kiel, Federal Republic of Germany), R.K. Pant (Ahmedabad, India) and W. Sauer (Heidelberg, Federal Republic of Germany) 45
Uranium series dating of calcite coatings in groundwater flow systems of the Canadian Shield
G.M. Milton (Chalk River, Ont., Canada) and R.M. Brown (Waterloo, Ont., Canada) 57
On the potential use of uranium isotopes for groundwater dating
K. Fröhlich and R. Gellermann (Freiberg, German Democratic Republic) 67
Isotopic fractionation of nitrogen and carbon in the synthesis of amino acids by microorganisms
S.A. Macko, Marilyn L. Fogel (Estep), P.E. Hare and T.C. Hoering (Washington, D.C., U.S.A.) 79

Guide for Authors

Special Session "Use of Stable Isotopes in Solving Depositional and Diagenetic Problems"

Introduction "Use of Stable Isotopes in Solving Depositional and Diagenetic Problems", by U. Brand 93

Isotopic aspects of thermal and burial diagenesis of sandstones at DSDP Site *445*, Daito Ridge, northwest Pacific Ocean
Y.I. Lee (Urbana, Ill., U.S.A.) 95
An oxygen isotope model for interpreting carbonate diagenesis in nonmarine rocks (Green River Basin, Wyoming, U.S.A.)
W.W. Dickinson (Denver, Colo., U.S.A.) 103
Depositional analysis of the Breathitt Formation's marine horizons, Kentucky, U.S.A.: Trace elements and stable isotopes
U. Brand (St. Catharines, Ont., Canada) 117

Research Papers

Isotopic variation in the shells of Recent marine invertebrates from the Canadian Pacific coast
U. Brand, J.O. Morrison (St. Catharines, Ont., Canada), N. Brand and E. Brand (Victoria, B.C., Canada) 137
Mantle and crustal components in a carbonatite complex, and the evolution of carbonatite magma: REE and isotopic evidence from the Fen complex, southeast Norway
T. Andersen (Oslo, Norway) 147
Argon difffusion in partially outgassed alkali feldspars: Insights from $^{40}Ar/^{39}Ar$ analysis
P.K. Zeitler (Canberra, A.C.T., Australia) 167
Cation-exchange column calibration for Sr and the REE by EDTA titration
S.B. Shirley (Washington, D.C., and Stony Brook, N.Y., U.S.A.), J.L. Banner and G.N. Hanson (Stony Brook, N.Y., U.S.A.) 183

Special Issue "Isotopes in the Sedimentary Cycle", by N. Clauer and S. Chaudhuri (Editors)

Preface "Isotopes in the Sedimentary Cycle", by N. Clauer and S. Chaudhuri (Editors) iii

0168-9622/87/$03.50 © 1987 Elsevier Science Publishers B.V.

^{10}Be as a tracer of erosion and sediment transport
L. Brown (Washington, D.C., U.S.A.) 189
On the isotopic chronology of submarine hydrothermal deposits
C. Lalou and Evelyne Brichet (Gif-sur-Yvette, France) 197
Type of sampling and comparison between K–Ar and Rb–Sr isotopic dating of fine fractions from sediments in attempt to date young diagenetic events
M.C. Bonhomme (Grenoble, France) 209
Rb–Sr dating of fluid migration in hydrocarbon source rocks
P.C. Smalley (Kjeller, Norway), A. Forsberg (Oslo, Norway) and A. Råheim (Kjeller, Norway) 223
Multi-phase oxygen isotopic analysis as a tracer of diagenesis: the example of the Mishash Formation, Cretaceous of Israel
A. Vengosh, Y. Kolodny and Maya Tepperberg (Jerusalem, Israel) 235
Origin and evolution of Weber and Tensleep formation waters in the Greater Green River and Uinta–Piceance basins, northern Rocky Mountain area
R.L. Burtner (La Habra, Calif., U.S.A.) 255
Biodegradation of petroleum as a source of ^{13}C-enriched carbon dioxide in the formation of carbonate cement
R. Dimitrakopoulos (Montreal, Que., Canada) and K. Muehlenbachs (Edmonton, Alta., Canada) 283
Isotopic composition of pyrite: relationship to organic matter type and iron availability in some North American Cretaceous shales
D.L. Gautier (Denver, Colo., U.S.A.) 293
Iron sulphides in metasediments: isotopic support for a retrogressive pyrrhotite to pyrite reaction
A.J. Hall, A.J. Boyce and A.E. Fallick (Glasgow, Great Britain) 305
The Fe–Mn ore deposits of Urucum, Brazil: an oxygen isotope study
J. Hoefs (Göttingen, Federal Republic of Germany), G. Müller, K.A. Schuster (Clausthal-Zellerfeld, Federal Republic of Germany) and D. Walde (Brasília D.F., Brazil) 311
Minéralogie, géochimie, terres rares et âge K–Ar des argiles associées aux minéralisations filoniennes (Mineralogy, geochemistry, rare earths and K–Ar age of clays associated with vein-type mineralizations)
M.G. Bonhomme (Grenoble, France), J-C. Baubron et M. Jebrak (Orléans, France) 321
Archean sulphur cycle: Evidence from sulphate minerals and isotopically fractionated sulphides in Superior Province, Canada
E.M. Cameron and K. Hattori (Ottawa, Ont., Canada) 341
Anoxic stratified oceans as a source of sulphur in sediment-hosted stratiform Zn–Pb deposits (Selwyn Basin, Yukon, Canada)
W.D. Goodfellow (Ottawa, Ont., Canada) 359
^{34}S/^{32}S variations in trace sulphide and sulphate carbonate rocks of a Devonian reef, Alberta, Canada, and the Precambrian Siyeh Formation, Montana, U.S.A.
A. Ueda, F.A. Campbell, H.R. Krouse and R.J. Spencer (Calgary, Alta., Canada) 383
Upper Carboniferous to Upper Permian ^{13}C-enriched primary carbonates in the Sverdrup Basin, Canadian Arctic: Comparisons to coeval western North American ocean margins
B. Beauchamp, A.E. Oldershaw and H.R. Krouse (Calgary, Alta., Canada) 391
Phosphorite geochemistry: Isotopic evidence for meteoric alteration of francolite on a local scale
J.M. McArthur (London, Great Britain), P.J. Hamilton (Glasgow, Great Britain), J.T. Greensmith (London, Great Britain), A.J. Boyce, A.E. Fallick (Glasgow, Great Britain), G. Birch (Rondebosch/Cape Town, South Africa), J.N. Walsh, R.A. Benmore and M.J. Coleman (London, Great Britain) 415
The origin of sulphates in Castleguard, Columbia Icefields, Canada
C.J. Yonge and H.R. Krouse (Calgary, Alta., Canada) 427

Contents Volume 65, 1987 435